

Practice Board Exam Questions

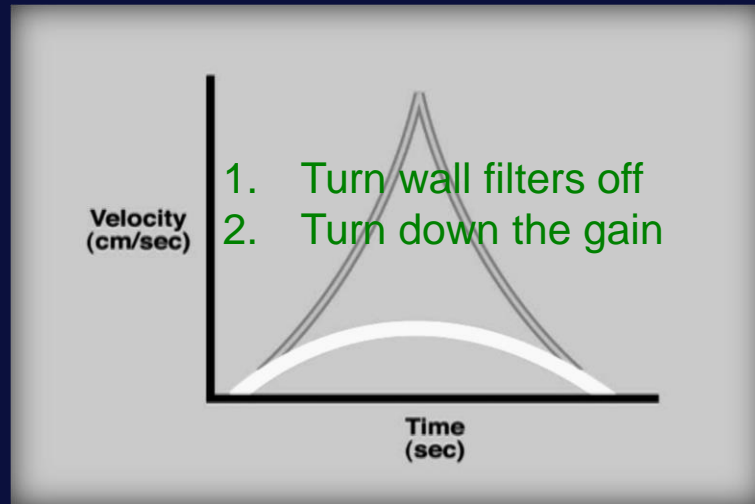
Myocardial (Strain) Imaging

Steven J. Lester MD, FACC, FRCP(C), FASE
Mayo Clinic, Arizona

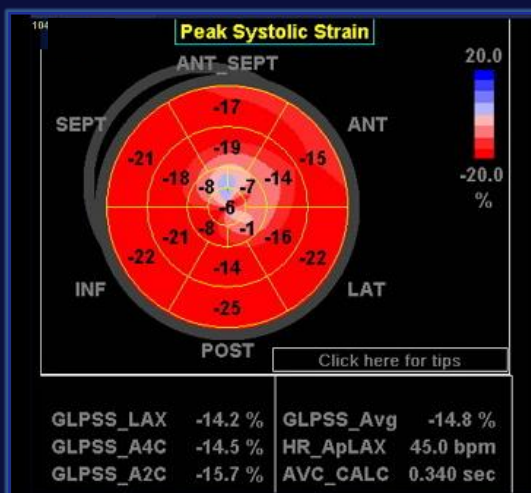


1. When obtaining a pulsed wave tissue Doppler signal you should?
 - a. Turn the wall filters on and turn down the receiver gain.
 - b. Turn the wall filters off and turn up the receiver gain.
 - c. Turn the wall filters off and turn down the receiver gain.
 - d. Turn the wall filters on and turn up the receiver gain.

Doppler: Doppler Tissue Imaging



2. A 46 year old female was referred for evaluation of chest pain. The regional and global longitudinal peak systolic strain values are shown in the parametric display. The findings suggest?



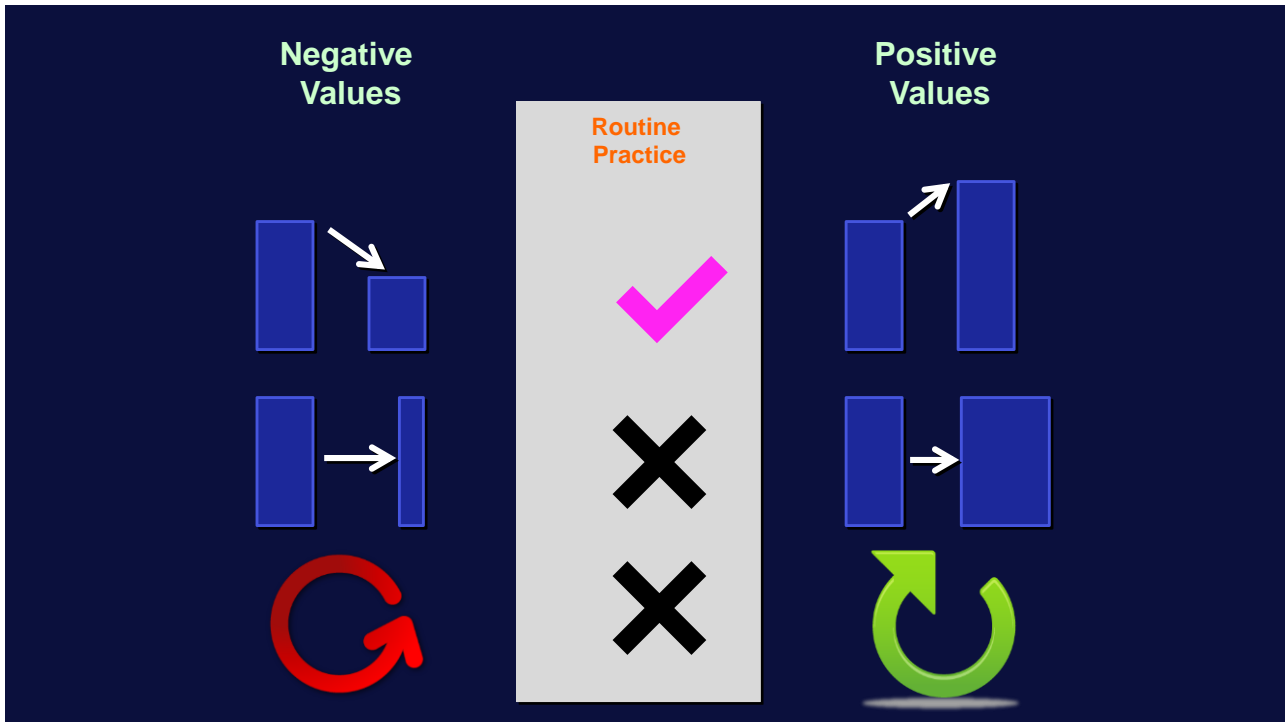
- A. Cardiac amyloidosis
- B. Apical HCM**
- C. Basal inferior infarction
- D. Hypertensive heart disease
- E. Renal failure

3. An advantage of “speckle tracking” myocardial imaging over Doppler Tissue Imaging is?

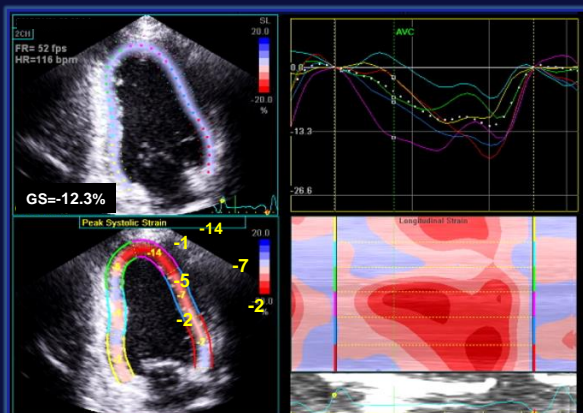
- a.** Strain values are measured along the axis of the ultrasound beam.
- b.** Velocity and strain values are measured from standard gray-scale images.
- c.** Myocardial velocity measurements are not influenced by translational or tethering motion as they are when obtained by pulsed wave tissue Doppler imaging.
- d.** You can measure longitudinal but not circumferential or radial strain.

4. Negative strain values are assigned to?

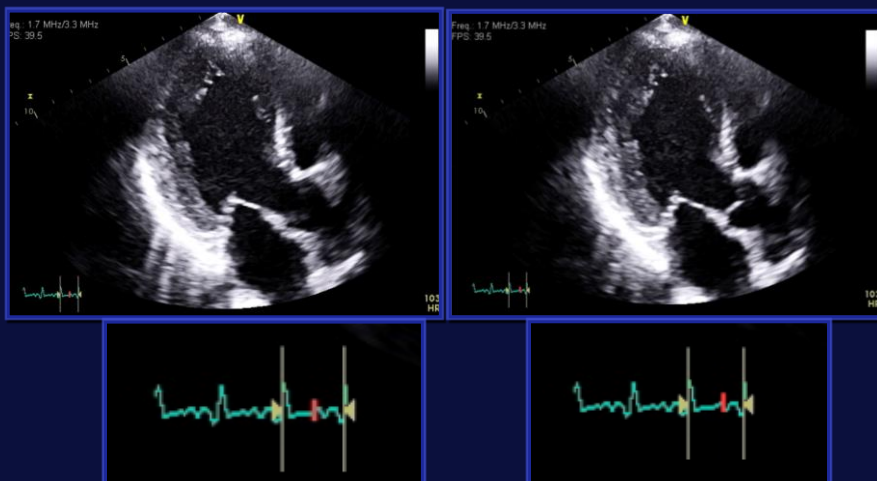
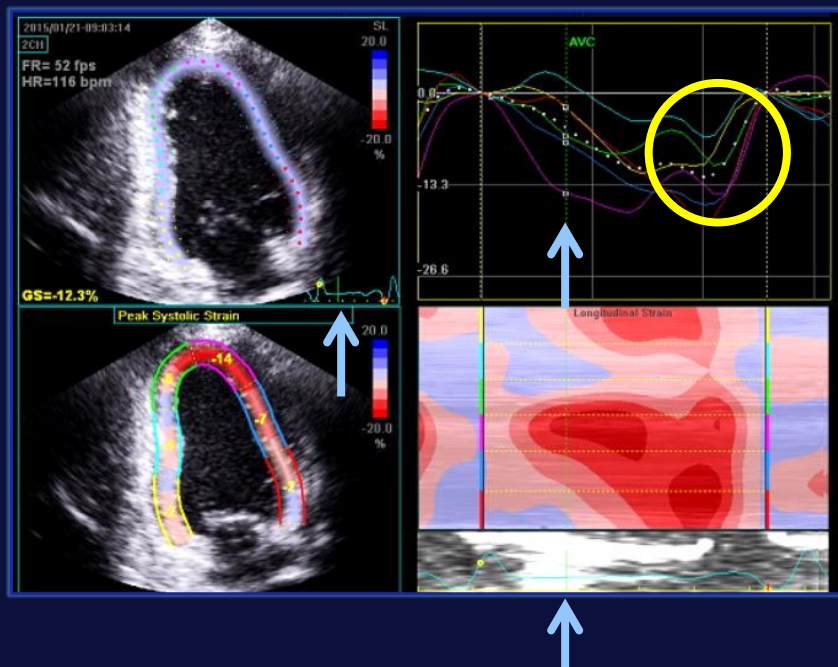
- a.** Shortening, Thickening and Counterclockwise rotation.
- b.** Shortening, Thinning and Clockwise rotation.
- c.** Lengthening, thickening and Clockwise rotation.
- d.** Shortening, Thinning and Counterclockwise rotation.
- e.** Shortening, Thinning and Clockwise rotation

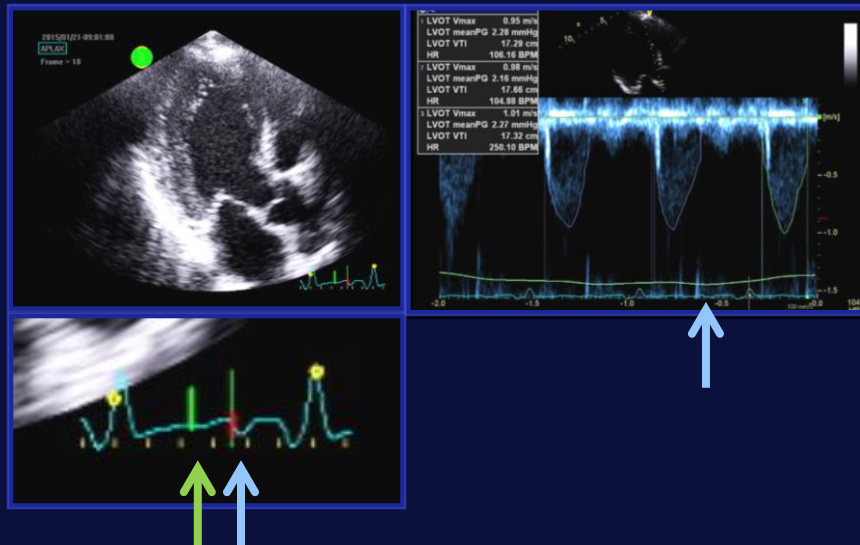


5. A 59 year women with breast cancer being treated with anthracycline based chemotherapy is referred to clinic after the echo reported a reduction in global longitudinal peak systolic strain. The clinician reviewed the echo and requested that the strain values be repeated. Why did the clinician suspect that the strain values were falsely low?



- a. Poor tracking
- b. The annulus is incorrectly identified and tracking part of the left atrium.
- c. The region of interest thickness is set too wide and including the pericardium.
- d. End-systole has been incorrectly identified/marked.





6. Compared to pulsed wave tissue Doppler the myocardial velocities obtained by color tissue Doppler are?

- a. Higher
- b. Lower**
- c. The same

Peak Velocities Pulsed TD



Mean Velocities Color TD

